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ABSTRACT

This report presents an overview of programs that may have a potential for prevention of teenage pregnancy. The report starts with a summary of expert opinions on the dimensions of and solutions to the problem and then describes several relatively successful programs. Following this is an overview of interventions with an analysis of program outcomes and costs (including cost per birth). Prevention programs in three areas are then discussed: (1) sex education and information services, (2) contraceptive services, and (3) programs that enhance life options such as education and employment. The implications of each type of program are assessed. Specific interventions with high priority are outlined in four key areas: school involvement, coalitions, media, and family involvement. A final section considers research requirements. Appended in chart form is a typology of interventions that may prevent teen pregnancy. (KH)

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REVIEW OF INTERVENTIONS IN THE FIELD OF PREVENTION OF ADOLESCENT PREGNANCY

Preliminary Report

to

The Rockefeller Foundation

October 1983

Submitted by:

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The views expressed in this report do not represent those of The Rockefeller Foundation.

The author welcomes comments on this report.

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JOY G. DRYFOOS

October 20, 1983

Dear Friends and Colleagues:

I have recently completed the first year of a study of strategies for the prevention of adolescent pregnancy. In the coming year, I expect to focus primarily on schools, further exploring the relationship between school retention and prevention of early child-bearing.

The Rockefeller Foundation, which supports this work, has agreed to reproduce this preliminary report so that it may be circulated for review, critique and discussion. The views expressed in the paper are my own and in no way represent the opinions of the Rockefeller Foundation.

Many of you supplied information, concepts, program material and inspiration. I would like to thank you for your help and hope you will continue to contribute to a stimulating dialogue. I should stress that this is a working paper and not a finished report.

I look forward to hearing from you. Please share this copy with interested co-workers; only one copy has been sent to any one agency. I thank you for your consideration.

Sincerely

Joy G. Dryfoos

Joy G. Dryfoos

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TABLE OF CONTENTS

SUMMARY		v
I.	INTRODUCTION	1
II.	STUDY APPROACH	4
	A. Interviews with "experts" and teenagers about how to prevent teenage childbearing	4
	B. Selection of "model" programs	7
	C. Site visits and telephone interviews	8
	D. Brief descriptions of selected programs	9
III.	OVERVIEW OF INTERVENTIONS: OUTCOMES AND COSTS	13
	A. Measuring outcomes: short-term and long-term	13
	B. Costs of programs	16
	C. Cost per birth prevented	18
IV.	STRATEGIES FOR PREVENTION	20
	A. Programs that directly impart knowledge	20
	B. Programs that provide access to contraception	21
	C. Programs that enhance life options	23
	D. Implications of these strategies	26
V.	INTERVENTIONS SUGGESTED BY THESE FINDINGS	28
	A. School involvement	28
	B. Coalitions	29
	C. Media	29
	D. Family involvement	29

VI. RESEARCH SUGGESTED BY THESE FINDINGS 30

A. Program evaluation 30

B. Documentation of the relationship between school retention and early maternity 32

APPENDIX 34

CHART 1. Typology of Interventions That May Prevent Teen Pregnancy 35

SUMMARY

This work began with the premise that interventions to prevent unintended adolescent childbearing have to extend beyond reproductive-related services such as sex education and family planning. While millions of teenagers are learning about and practicing effective fertility control as a result of such programs, the continuing high incidence of early maternity, particularly among disadvantaged children, gives evidence of the need for innovative new strategies. At the same time, it is critically important to protect and maintain the existing programs so that continuing access is assured for those who rely on the services.

Many experts contributed their ideas to this overview. A literature review was initiated in the extensive fields of secondary education and youth employment. A number of excellent programs were visited and several useful conferences and seminars attended. Interviews with adolescents in a variety of settings contributed an important dimension to these considerations.

These approaches yielded a vast amount of material, more than can be absorbed and assimilated at this time. Additional site visits are still in the offing as new exemplary programs are pin-pointed; new research findings are becoming available every day. Thus, this report is a working paper into which new findings and new concepts can be introduced following review by interested colleagues.

The interviews, site visits and readings have shaped the basic assumption of this effort: that teenage childbearing for many youngsters is a symptom of an even larger and more complex problem, namely deprivation, and that there is no way that the symptom will disappear without attention to the quality of life that is producing early maternity. Although most childbearing in this group is unplanned, the motivation to prevent pregnancy is lacking and conception is viewed with passivity and acceptance of "fate."

Many causes of deprivation were identified: racism, urban decay, automation, family disorganization, welfare policies, illiteracy, housing patterns and other complex factors; as several interviewees stated, in order to eradicate teenage childbearing, it may be necessary to restructure the entire society. It is clear that none of these variables are amenable to quick fixes; however, some are amenable to change; and, of these, the most crucial for the welfare of youngsters is education.

While educational achievement alone cannot close the gap between disadvantaged and advantaged populations, it is clearly the beginning point from which upward mobility springs. The greatest revelation during this year has resulted from an exploration of drop-out rates currently reported by the nation's schools. For the country as a whole, fully 25 percent of fifth-graders do not make it through high school, and in urban centers, the rates are well over 50 percent. Research studies show that fewer than half of the girls drop out because they are pregnant. Clearly, risk of pregnancy among those who are not yet mothers increases rapidly as they hit the streets and find almost no employment opportunities. Many of the young mothers, whether in school or out, gave evidence of a severe lack of cognitive development and an inability to make informed decisions about their future. As has been pointed out in repeated studies, unintentional pregnancies are occuring most often to young girls who claim to have known about contraception but did not use it.

Schools should be the loci for assisting youngsters long before they reach the level of alienation and academic failure that causes them to drop out and/or have babies. However, priorities in education appear to be concentrated increasingly on upgrading the quality of basics for middle-class children, especially in math and science, so that they can score higher on SATs. The decline in test scores has been attributed by the Secretary of Education to the shift of priorities from basics to assisting deprived and minority children during the 1960s and 1970s. As a result of this philosophy, funds for remediation have been cut and less attention than ever is being given to the educational needs of deprived youth.* Nevertheless, there is strong evidence that certain low-cost educational interventions can be successful in retaining high-risk youngsters in school and raising their levels of performance, aspiration, employability and continuing education. (Not all of the interventions of the past have been effective.) Special educational initiatives have proven successful at lowering the rate of repeat pregnancy among teenage mothers and may prove to be instrumental in reducing the probability of pregnancy among teenagers who have not yet become mothers.

It would be desirable for other institutions such as families, churches and social agencies to help youngsters to develop the strengths to be able to make mature decisions about their futures, including childbearing. Unlike former generations of parents, today's parents (often single) do not appear to be able to act as role models, instructors or counselors for their children. Many are too beset with their own survival crises to give their children the support they need. Churches have backed away from this responsibility, some by not

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*In the current legislative session, some of these funds are being restored.

acknowledging that the problem exists while others offer sermons in morality that cannot compete with the pull of drugs, alcohol and street life and the messages of rock music. Social agencies stand ready to help youngsters with a vast network of recreational, remedial and social services, but they are more likely to come in contact with high-risk youngsters only after the schools have failed to educate them. Social agencies are eager to develop collaborative relationships with schools, but they cannot take over the function of education.

The major conclusion of this study to date is that school retention must receive high priority as an intervention to prevent early childbearing. Such schooling must be of a calibre that children are given a sense of self-esteem and elevated aspirations and, most importantly, are allowed to develop the skills necessary to achieve this aspiration. The know-how exists: schools that have goals of giving disadvantaged and alienated children quality education have achieved these goals.

The impact of early childbearing on school completion has been well documented. The impact of school completion on the probability of early childbearing has not been fully documented, but the required research can be conducted using data from existing sources (National Longitudinal Surveys, High School and Beyond, Current Population Survey, U.S. Census, National Survey of Family Growth) and gathering information from ongoing programs such as alternative high schools.

Based on these preliminary ideas, a number of strategies are proposed. Acknowledgement is made of the essential contribution of sex education and birth control services to the prevention of unintended pregnancy and of the necessity for continuation and strengthening of programs in these fields. Several new approaches are identified that tie sex education into the broader area of life planning, recognizing the concept that decision-making about sexual matters is only one aspect of decision-making about future life options.

Strategies that are aimed at schools are given the most attention in this report. Several high-school based programs are described that make contraceptives available to students along with general health services, sex education, individual counseling and support. A number of approaches to improving the overall educational outcomes of disadvantaged children have been tested: alternative schools, special remedial classes, counseling and support services. These needy students have responded well to individualized educational programs, work-study arrangements and most importantly, a warm caring atmosphere.

Concensus is strong that the key actor in school systems is the principal. She or he can initiate innovative programs, conduct in-service training for teachers, oversee suspension and expulsion policies and create a good learning environment. Thus school administrators would be a prime target for information about how their schools could perform their twin functions of upgrading the quality of education for disadvantaged students and assisting the students to delay childbearing until they were ready to be parents.

While everyone agrees that parents of adolescents need to be "involved," most of the programs aimed at parents are not accessible to disadvantaged and minority families because of their timing and location and their content and language. To overcome these barriers, new efforts in educational and advocacy activities are being initiated, aimed at indigenous church and social leaders. They are being trained in "what to do and where to intervene."

Many community resources are available that can impact on the lives of young people but these services are often fragmented and uncoordinated. Coalitions and networks can be effective in pulling together diverse groups to share facilities, staff, volunteers, curricula and experience. In many places, youth-serving organizations such as Girls Clubs, YWCA's and the Salvation Army work collaboratively with the schools to enrich school programs.

Reproductive-related service agencies, youth-serving agencies and educational institutions can work together to further the life options of disadvantaged youngsters. Coordinated programs for teenage mothers already exist in many communities. If the same range of services could be made available to high-risk youngsters before they become pregnant, it is possible that much of the childbearing could be prevented. In many communities, the price that a teenager has to pay to get the individual attention she needs from the school system and other institutions is to have an early birth.

I. INTRODUCTION

Adolescent pregnancy rates in the United States remain high. Despite the wide diffusion of sex education programs and family planning services, there are still more than a million teenage pregnancies every year, mostly unintended. Abortion rates and out-of-wedlock birth rates are rising while legitimate births have decreased significantly. This overview centers on the prevention of early unintended childbearing occurring to unmarried teenagers.

Since 1970 out-of-wedlock birth rates have increased by more than 50 percent among white youngsters aged 15 to 17 while the rates for black 15 to 17 year olds have decreased by five percent. Yet the difference in incidence between white and black girls remains significant: a 15 to 17 year old black girl is six times as likely as her white counterpart to bear a child (Table 1). A very high proportion of unintended childbearing occurs to young women from economically and socially deprived families; the birth of the baby results in negative consequences for the mother, the father, the grandparents, and the child itself. Many of these consequences are related to the social circumstances of the family rather than to maternal age per se.

A review of research shows that the psycho-social characteristics of teenage mothers are similar to the characteristics of other "problem groups" such as school drop-outs, unemployed youth, functionally incompetent youth, and delinquents: low self-esteem, low aspiration, poor academic achievement, low status families, poor parent-child relationships. Solutions to the problem of teenage childbearing may be interwoven with solutions to the devastating array of problems confronting disadvantaged families.

The "epidemic" of a million teenage pregnancies that occur every year is a statistic well known to people interested in reproductive health care.* Less familiar are the data about

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*In 1980, there were actually 562,330 births to women under age 20, 271,801 of those births were to unmarried women. More than 300,000 of the births were probably unintended. In addition, 460,120 abortions were obtained by women under age 20 and it is estimated that there were 158,000 miscarriages in this age group. The total number of pregnancies was 1,180,450.

TABLE 1

ESTIMATED BIRTH RATES FOR UNMARRIED WOMEN AGED 15 TO 19 BY RACE OF CHILD, 1970-1980

(Rates are live births to unmarried women per 1,000 unmarried women)

	Age 15 - 17		Age 18 - 19	
	White	Black	White	Black
1980	11.8	74.2	23.1	123.9
1979	10.8	71.0	21.0	123.3
1978	10.3	68.6	19.3	119.6
1977	10.5	73.0	18.7	121.7
1976	9.7	73.5	16.9	117.9
1975	9.6	76.8	16.5	123.8
1974	8.8	78.6	15.3	122.2
1973	8.4	81.2	14.9	120.5
1972	8.0	82.8	15.1	128.2
1971	7.4	80.7	15.8	135.2
1970	7.5	77.9	17.6	136.4

SOURCE: National Center for Health Statistics, DHHS (NCHS), Advanced Report of "Final Natality Statistics, 1980," Monthly Vital Statistics Report, vol. 31, no. 8, Supplement, Nov. 30, 1982, Table 16, p. 26.

school and jobs: some 600,000 teenage women (16 to 21) are in the labor force yet unemployed; 400,000 14 to 17 year old girls are not currently enrolled in school; 1.3 million 18 to 21 year old young women have never graduated from high school. The fact that more than half of the students drop out of school in the largest cities is not widely broadcast. Many disadvantaged youngsters fall into all of these deprived categories; they are drop-outs, unemployed, and/or mothers.

This report presents an overview of programs that may have a potential for prevention of teenage pregnancy classified into three groups: sex education and information; contraceptive services; and broadening life options such as general education and employment. Chart 1 presents this typology of interventions arrayed by setting, client or target population, personnel and preliminary examples. (See Appendix)

The report starts with a summary of "expert" opinions on the dimensions of and the solutions to the problem. Opinions were also sought in the selection of exemplary programs, followed by site visits, telephone interviews and report reviews, summarized in this presentation. An effort was made to identify programs successful in assisting teenagers to prevent unintended childbearing. Very few programs can demonstrate such an outcome but many programs can document the successful accomplishment of other stated program goals such as imparting information, utilization of services and achievement of educational objectives. These measures are reviewed in a section describing findings on outcomes and costs.

A discussion of program strategies suggested by this overview is organized according to the classification scheme followed by a summary of the implications for the future. Specific interventions with high priority are outlined in four key areas: school involvement, coalitions, media and family involvement. A final section considers research requirements.

It must be emphasized that this is an informal discussion paper and not a formal research report. It is a preliminary work, summarizing the findings at the end of the first year of a two-year investigation. The views expressed are entirely those of the author and not of the Rockefeller Foundation.

II. STUDY APPROACH

The methodology used for this overview included interviews with "experts" and teenagers about their experiences with and their ideas about prevention of teenage childbearing. Exemplary programs were suggested during interviews and/or emerged from a review of the literature. A number of programs were visited and others were investigated through written reports and telephone interviews.

A. Interviews with Experts

More than fifty interviews were conducted with a wide range of "experts" about their views on how to prevent early childbearing. Federal, state and local program administrators, policy analysts, researchers, youth advocates and community leaders were interviewed in person or by phone. In addition, more than thirty youngsters were interviewed in small groups or individually.

Interviewees were eager to respond to this request for advice but most of them expressed uncertainty about their answers. Almost everyone stated that the problem of teenage childbearing was complex and did not lend itself to short-term solutions. They expressed the opinion that early childbearing was rooted in a worsening social environment exacerbated by the lack of opportunities for disadvantaged youngsters. Many commented that the problem would be even harder to solve during this period because of the acute job shortage for youth.

A depressing composite portrait resulted from these interviews: of children from disadvantaged families living in chaotic conditions; of parents unable to support their children either economically or emotionally; of families besieged with the daily struggle for food, housing and jobs with no time or energy left over for their children; of children uncared for, abused and lonely.

Some of the youth-care workers felt that pregnancy was an expected outcome of these conditions. They described young mothers who had become pregnant out of a dire need for someone to love or someone who would love them. Several interviewees suggested that the expectation of welfare might also motivate girls to become pregnant; others felt that in reality the small amount of money received did not make childbearing a feasible alternative.

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The fantasy of motherhood and family life as portrayed and promoted by media was mentioned as one explanation for the increasing birth rate. It was pointed out that young mothers often get more attention from social, medical, education and welfare agencies while they are pregnant or shortly after the new baby arrives than at any other time in life. It is of some interest that it was much easier to elicit suggestions from this group of very knowledgeable respondents on how to help pregnant teens and teenage mothers than on how to prevent pregnancy. At least one youth worker questioned whether teenage childbearing would really be a problem if comprehensive programs could assure that most of the pregnancy outcomes would be positive. She also proposed a network of group homes that would accommodate the newly created young families and give them a good start in life.

Several of the respondents were black and/or worked with black women. They each mentioned independently the role of black mothers in their daughters' pregnancy histories. While black women are well aware of the consequences of early childbearing and do not want their daughters to have this experience, when pregnancy occurs they tend to be very supportive; as one person stated, "they aid and abet" the pregnancy. The main reason cited for this attitude was the tradition of "caring for one's own," dealing with family crises and making the best of a difficult situation. Thus adoption would be out of the question. Abortion is also strongly discouraged in many black families because it is thought to be dangerous or because a human life is at stake.* Apparently, black churches evidence similar non-judgmental attitudes toward aiding and abetting the teen mother and discouraging abortions.

Much was stated in interviews about Hispanic culture and the differences between generations in their attitudes toward sexual behavior. One Hispanic leader stressed the need to help young Hispanics develop a sense of cultural identity in order to strengthen their self-esteem. The concept of survival skills was mentioned often, meaning the skills necessary to enter the economic system including literacy, social skills and perhaps, inferred but not mentioned, how to survive on crime-infested streets in an underground economy.

In discussions about minority youngsters, the expression "role model" was often repeated. Because of the stressful family situations as well as the lack of connections found in minority (and often displaced) families, many children need someone who can give them assurance that they can "make it." Guidance counselors in schools can play this role but rarely do. Some children need individual one-to-one attention from a

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*Actually, abortion rates among black teenagers are more than twice the rates for white teenagers. It was estimated that the comparative rates were 51.2 and 24.3 per 1000 black and white women aged 15 to 19 in 1978.

responsible older person who can act as a surrogate parent to provide the routine and consistent guidance and contact and support that advantaged children usually receive from their parents.

Many of the interviews centered on the problems of minority families perhaps because white families are not so visible to youth workers in urban areas. However, one program for street children in Boston has a caseload that is almost all white, largely Italian and Irish, and these families evidence stresses comparable to those in minority families. In these groups, more mention was made of the problems of child abuse, neglect and alcoholism.

Interviews with teenagers provided an important counterpoint to the older generation. Young people are well aware of the problem of what almost all seemed to be describing as "rampant sexuality." Many of them attributed unintended childbearing to their peers' stupidity, carelessness, "sluttishness" and general lack of concern. Even young mothers described themselves as "dumb"; "I knew better but I took a chance"; "I thought I could get even with my father for being so mean"; "I wanted to please the dude."

Several youth workers commented on the high proportion of teenagers who knew about contraception yet became pregnant. Other respondents mentioned the fear of birth control pills' side effects as a reason for not using contraception and this was reiterated by all of the teenagers interviewed: "It causes cancer, death, pimples, fatness -- doesn't it?"

The teenagers stressed parental roles even more than adult respondents. Whatever they felt seemed to be presented in relationship to what their parents had or had not communicated to them. "If I got pregnant, my mother would kill me"; "When I told my mother I was pregnant, she said that's o.k., we'll get along." As is clear from other research, the more highly motivated the girl was in regard to further education and career, the less likely she was to consider being a teenage mother. While peer pressure is dominant, motivated children apparently feel more pressure to succeed in school than to initiate sexual intercourse. Schools followed parents in order of influence. One group of youngsters cited a strict school principal who kept all the students in line; "she wouldn't allow you to fail." A young mother of three children described how she became a mother at 16 because school was so boring and she felt like a failure.

School personnel were mentioned often as key: the principal, followed by the superintendent and the school board; the guidance and vocational counselor; teachers and nurses. School facilities were thought to be the best location for prevention

interventions because as one person said, "you have to approach children where they happen to be" and another commented that "you have to take kids by the hand and lead them" (from a classroom to a clinic). Everyone stressed the importance of the early years: for making school a place where children felt comfortable and could learn; for remediation to make up for the lacks in homes and families; for family life education that included sexuality and decision making.

Most respondents concurred that preventing school drop out might also prevent early childbearing but no one had any hard evidence that this was true. School systems were described in which half of the pregnant girls had dropped out prior to pregnancy because of "insensitive teachers, boredom and fear of violence." Several school personnel stated that they could identify most of the girls who were at high risk of early childbearing by the time they were in the seventh grade. Some of the risk factors mentioned were school failure, poor attendance record, family on welfare and minority group membership. While they thought identification would be possible, they expressed concern about characterizing and possibly stigmatizing youngsters about this issue.

The word "involvement" was used repeatedly: parents, school, youth-serving agencies, media, justice system and community. There was concensus that no one approach could solve the problem of teenage pregnancy. Everyone agreed that it was going to be expensive. Most respondents stressed the need for early intervention. One child welfare worker stated "some kids are rescuable from their impossible family situations, but for a large segment, the damage is so severe that they will not be reachable without intensive one-to-one intervention." A poverty program director carried this pessimistic view one step further by advocating a restructuring of the entire welfare system, with intensive social work to prevent drop out, beginning with Headstart. The same individual felt that "churches had lost the competition for moral enlightenment with media and had become irrelevant."

B. Selection of "Model" Programs

In order to develop an overview of the most effective approaches to assisting teenagers to prevent unintended pregnancy, a broad range of interventions were classified according to their potential impact:

1. Programs that directly impart knowledge or attempt to develop or change attitudes regarding sexual behavior (e.g., sex education programs)

2. Programs that provide access to contraception (e.g., family planning services)

3. Programs that enhance life options (e.g., alternative schools).

Chart 1 displays this scheme, grouping programs by these goals. Because the scope of this study is so broad, almost any youth-serving agency fits into this classification system. There are many thousands of agencies and institutions among which exemplary programs might be found; for example, there are about 25,000 public high schools in the United States of which at least one third have sex education courses, and one in ten have alternative options to schooling. Family planning clinics that serve adolescents number about 4,000. Almost every community has its own scout troops, YWCA, Big Brothers and a wide variety of church groups.

This overview represents a one year effort to identify "models" of exemplary programs that fit into the typology. It is at best a rough indication of the enormous amount of activity that goes on in the public and private sectors to help the nation's children. A number of listings were used and opinions of experts solicited for suggestions of successful programs. A review of the literature on school drop-out resulted in the selection of several potential sites; newspaper stories about community response to the problem of teenage pregnancy led to others. Not all of the suggestions led to site visits and not all of the site visits led to "models." It should be emphasized that the described programs are not representative of the universe.

C. Site Visits and Telephone Interviews

Site visit interviews elicited information on community background; rationale for the program (the need); how it was implemented; current and future activities; measures of outcome; reactions of clients, staff and community; and cost. Several programs provided annual reports, brochures and/or articles.

Program directors were generous with their time and information and were impressive in regard to their knowledgeability, commitment and enthusiasm. It was clear from the outset that highly regarded programs have skillful and effective leaders. This principle seems so obvious yet it is important to keep in mind when thinking about replication of "models." Only one major shortcoming was nearly universal and that was the lack of outcome data, or at least measures of outcomes of interest to this study. The quality and availability of cost data were better than expected. (Outcomes and costs will be discussed in the next section.)

With rare exceptions, even the best programs cannot be labeled as "models" of interventions successful at preventing

pregnancies. A more accurate description would be that these are successful programs (successful by other measures) with potentiality for prevention of pregnancy. A better label than "models" is "selected" -- selected because they are efficiant and effective in the eyes of experts. A number of "selected" programs are described briefly to show the diversity of interventions encountered during this year.*

D. Brief Descriptions of Selected Programs

1. Programs that impart knowledge or change attitudes

a. Santa Barbara, California Girls Club: Self-Help Book (personal interviews and reports). A 9 to 18 week course for 9th grade girls built around a 210 page workbook called CHOICES: A Teen Woman's Journal for Self Awareness and Personal Planning. This course has been tested in three sites, students have reacted enthusiastically, and the book has been published for national distribution. A teacher leads the class through a series of do-it-yourself exercises dealing with decision making, assertiveness training and values clarification. The workbook offers a great deal of information about career choice, family budgets and family and social relationships. It is particularly strong in stimulating thought about the consequences of early childbearing, using scenarios to show the impact.

b. Madison, Wisconsin: BARNY, The Body Awareness Resource Network Project (interview and paper). Researchers at the University of Wisconsin, Center for Health Systems Research and Analysis, have developed a computer-based health education system to meet information and communication needs of adolescents and their parents concerning sexual issues. The BARNY computer program is being made available for home, clinic and school use with a view toward impacting on cognitive, affective and behavioral aspects of human sexuality. Users may review values, learn facts about reproduction, pregnancy, STD, contraception, community resources and explore "true-to-life" situations such as "saying no" and other dating decisions. This computer activity has been well received by participants in the early research phases; it is of particular interest that more male students have requested the cassettes than female. The cassettes will be released for general use.

c. Tacoma, Washington: Radio Spots (correspondence and cassette). A 30 segment "soap opera" called "General High School" was produced by the Tacoma-Pierce County Health Department using a script, music and acting by local high school

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*Not included among the selected programs were "traditional" sex education classes and family planning clinics. The purpose of the descriptions is to add to existing knowledge about programs and broaden the range of potential interventions.

students. It portrays the negative consequences of early childbearing for a typical high school couple. Each 60 second spot, played at no cost by the local radio station, is accompanied by the citation of a different referral source for family planning, maternal and child health and other health and social agencies.

2. Programs that provide access to contraceptive services

a. Jackson, Mississippi: Lanier High School Adolescent Health Education Program (site visit). This is a comprehensive health education, health clinic, pregnancy amelioration and child care program operated within a city high school. The widest array of medical services are available to the students as well as sex and family life education classes and individual counseling. The program is jointly supported by a number of agencies including the Jackson-Hinds Neighborhood Health Center; National Health Service Corps; Mississippi Department of Health, Office of Family Planning. The facilities are made available by the school. The clinic suite is fully equipped and operated by medical personnel; the child care center can accommodate 30 babies and is used by the school for classes in child psychology as well as for job placements.

b. Baltimore, Maryland: The Johns Hopkins Adolescent Pregnancy Prevention Program (site visit). A junior high school, a senior high school and a nearby free-standing clinic (the Self Center) are the combined sites for this program, sponsored by the Medical Center with foundation support. Nurse practitioners and social workers are stationed in the schools during the day to provide sex and family life education and counseling and referral for the students. They also work at the clinic to which the students are referred for birth control. A major research effort is being undertaken to evaluate the impact of the school intervention on clinic and contraceptive use, and, ultimately, on the reduction of pregnancy.

c. St. Paul, Minnesota: Maternal and Infant Care Project, High School Clinic, Education and Day Care Program (personal interview and reports). Health clinics operated in four high schools where comprehensive services including family planning are offered by a multi-disciplinary team. This program, operating in a school since 1973, has become the prototype for school-based clinic services. With a strong research orientation, the program has demonstrated its impact on fertility rates, school retention and continuation of contraceptive use. Success has been attributed to consistent daily contact with the service team, made possible through an "open door" policy in the clinics and the wide range of services available. The St. Paul Maternal and Infact Care Project is administered by the Departments of Obstetrics / Gynecology and Pediatrics of the St. Paul Ramsey Medical Center.

3. Programs that enhance life options

a. Boston, Massachusetts: The Bridge (site visit). For more than a decade, The Bridge Over Troubled Waters has been reaching out to street kids to offer them a wide range of services including counseling, medical care, family planning, STD, employment counseling and placement and, for teenage mothers, child care and parenting. Particular attention is paid to assisting youngsters to attain high school equivalency degrees. The setting and ambience of this program, in the heart of the Boston tenderloin, is conducive to trust and reflects this program's special quality of being able to work with deeply troubled "turned off" youth from multi-problem families.

b. Hattiesburg, Mississippi: Alternative High School Program (site visit). Hattiesburg offers a highly structured alternative to those high school students who cannot cope with the demand of the regular school. In two classrooms, these problem children are given support, guidance, individual attention and basic education by two very committed and highly trained teachers. There are many more innovative alternative schools around the country but this one is interesting because it demonstrates the ease with which a superintendant can organize a special effort on behalf of high-risk students if he wants to. In this case, no additional funds were required since no new teachers were added to the system and the classrooms were located in an under-used former grammar school.

c. Queens, New York: Middle College High School (site visit). This alternative high school provides 450 potential drop-outs with a stimulating school setting across the street from and in cooperation with LaGuardia Junior College. Students have a wide range of creative course offerings in small classes with involved teachers. One trimester out of three they go to field placements for career internships; they are closely supervised on the job and by a school-based career counselor, returning to the school weekly for seminars. High priority is given to interpersonal relationships and considerable effort is made to inform students about birth control and the consequences of pregnancy.

d. St. Louis, Missouri: Teen Outreach Project (report). Two city high schools participate in this after-school program which has the twin goals of reducing the incidence of pregnancy and encouraging the completion of high school. High-risk (of pregnancy) students are invited to join weekly discussion groups aimed at increasing self-esteem and to act as volunteers in community programs for at least 4-1/2 hours a week. The local Junior League supports the program with funds and augments the small staff with volunteers. The Teen Outreach Project has recently been funded by a foundation to replicate this program in six other cities under the auspices of local Junior Leagues.

e. Houston, Texas: Adolescent Primary Health Care Center (telephone interview and reports). A central medical facility, supported by an array of public and private sector resources, provides services to adolescents from seven inner-city schools with 6,000 students and operates a child care center for the children of teenage mothers. Students, on their own initiative, are bussed daily from their schools to the clinic for routine medical care, pregnancy testing, infant, child and maternity care. During these visits, family planning and sex education are made available through individual counseling. The clinic is currently fully utilized without any outreach or recruitment. The major emphases in the program are on improving health for disadvantaged children and assisting teenage parents and their children. The program has the structure and capacity to assist students to prevent pregnancy. The philosophy of the program director is that children must first learn basic decision-making skills before they can use contraception effectively. She belives that a comprehensive approach involving medical, social and educational interventions is necessary.

f. Atlanta, Georgia: Metropolitan Atlanta Girls Club (report). A youth employment project aimed at increasing awareness of employment opportunities and employability skills and enhancing positive attitudes toward school and work was made available to 25 girls aged 14-21 who had been involved in the Juvenile Court. Seminars on goal-setting, careers, health issues and human sexuality were featured along with on-the-job training. Almost all of the participants secured summer employment (through CETA) and were mainstreamed into the regular Girls Club programming.

g. New Orleans, Louisiana: Improved Pregnancy Outcome Project Coalition (site visit). The IPO received national attention when it sponsored, in cooperation with the Mayor's Office, a community wide forum on the subject of teenage pregnancy, a tradition shattering event in New Orleans. The Coalition that was put together for this event included a variety of health and social service agencies, mostly concerned with pregnancy outcomes. Following the forum, based on community responses and needs, the Coalition expanded its constituency to include family planning agencies. The major importance of the Coalition beyond consciousness raising appears to be the development of relationships between various youth-serving agencies. While this seems like a low level of accomplishment, in most communities a first step toward intervention will be to develop even a minimal referral network. The IPO is selected here because it is an example of a coalition with potential, not yet realized.

III. OVERVIEW OF INTERVENTIONS:

OUTCOMES AND COSTS

A. Measuring Outcomes: Short-Term and Long-Term

Several interesting and innovative programs with the potential for preventing pregnancy have been identified in addition to sex education courses and family planning clinics; which ones can document success in achieving that goal? To answer this question, it is necessary to know the rate of teenage childbearing averted as a direct result of an intervention. This would require either the knowledge of the teenage fertility rate for clients prior to and post-intervention or comparative rates for a matched control group. Such long-term outcome measures are difficult to find. With few exceptions, even programs with the specific goal of preventing pregnancy cannot demonstrate directly that such a goal has been met. It is not surprising, therefore, that programs with other goals (such as educational achievement) that may also have the potential for preventing pregnancy, do not collect data needed to show a fertility effect.

Selected programs were able to demonstrate that they achieved short-term goals related to their specific program objectives:

1. It has been proven that sex education programs can provide information, clarify values, and in a few places, result in improvement in contraceptive use at six-month follow-up

2. Family planning services can provide birth control services, maintain high continuation rates, involve parents, involve peers, and provide health screening

3. Alternative high schools can prevent drop-out and enhance learning. Employment training programs can place teenagers in jobs.

Success in these programs is measured primarily by head counts and/or by head counts as a percent of the target population, and secondarily, by outcomes such as changes in attitudes and knowledge, continuity of use, improvement in health status, completion of courses, job placements and other such measures.

Only one program has been identified with a specific goal of preventing pregnancy that could actually document that such a goal had been met (St. Paul).* Outcome measures for this program resulted from retrospective examination of the school and clinic records for all students who received family planning services. The program is administered through the St. Paul Ramsey Medical Center and derives its strong research orientation from its medical university affiliation. The Johns Hopkins program has been designed to conduct important research linking pregnancies to contraceptive and clinic use. However, the research is in early stages and the only statistics available are for clinic enrollment.

While no family planning agency has been identified that can document a specific fertility effect among its clients, family planning advocates have often used the national estimates that "in one year alone (1979), more than 400,000 unintended teenage pregnancies were averted through the family planning program. Had these pregnancies occurred, there would have been more than 670,000 teenage births that year instead of 560,000...."** In 1979, there were 1.5 million teenage family planning patients, implying that one birth was averted per 13.6 patients (1, 500,000 patients ÷ 110,000 averted births). Some local agencies have applied formuli such as this to their patient loads to describe the impact of their programs.

The evidence from this sampling of selected programs is that sophisticated evaluation capable of measuring the impact of specific interventions on the reduction of pregnancy requires university or medical center affiliation. Retrospective record searches and patient follow-up studies are costly, time consuming and require a level of technical ability not ordinarily found among program-oriented people. The Hopkins program is a good example; the cost of the research is about equivalent to the cost of the services. The research would not have been undertaken without the initiative of the research staff.

The Jackson, Mississippi Lanier High School program is an effort that is begging for research: the program components have been in place for several years, school records are available and the program director and the high school principal probably would be interested in demonstrating the effectiveness of the program, but there are no internal resources for research. Since sex education and birth control prescription are stressed in the Lanier program, pregnancy prevention would be an obvious outcome to measure.

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*The fertility rate in the participating high schools dropped from 59 to 31 per 1000 students between 1976 and 1981.

**AGI, Issues in Brief, vol. 2, no. 1, January, 1982.

For the broader "life options" types of program, such as schooling and employment, pregnancy prevention may be an indirect outcome and its measurement more obscure. Yet program staff often have an intimate knowledge of the lives of their clients. In the New York City Middle College High School, the question "how many girls had babies last year?" was answered with an immediate count by the principal. (The answer of three to six births per year suggests a strikingly low birth rate in a population of disadvantaged youngsters.) No one had ever posed that question before. The school, because it is experimental and connected to a college, has tracked its students carefully to document a very high retention rate and an enrollment rate in college or vocational school that is striking (85%). In these kinds of institutions, collecting usable data about pregnancy rates may be simply a matter of consciousness-raising about program potential for pregnancy prevention.

Experience with evaluation of "adolescent pregnancy" programs (mothers and babies) is worth reviewing. During the short period of federal categorical funding of comprehensive programs for teenage mothers, about 26 agencies received grants that required participation in a data system. It was possible to track patients in those programs and review educational, occupational and pregnancy outcomes over six-month intervals from the initiation of services. Many programs during that period were able to document a low repeat pregnancy rate. After the adolescent pregnancy program was block-granted into the Maternal and Child Health funds, this evaluation capacity was lost. Nevertheless, a number of "mothers and babies" programs are able to report on repeat pregnancy rates among continuing clients.

In summary, the ability of prevention programs to demonstrate their impact on the reduction of early childbearing is limited. Only those few programs with built-in research capacity can produce such measures. Other programs could produce data showing changes in client fertility rates if they were provided with outside resources to gather and analyze the data. It may be unrealistic to expect that programs with short-term goals such as changing attitudes or improving knowledge should be able to prove that a long-term impact on fertility resulted from the intervention. It may even be unrealistic to expect that family planning programs can demonstrate fertility impacts without the availability of outside resources to conduct follow-up studies and devise control groups. Perhaps a more useful framework is to look for programs that achieve their stated goals efficiently and effectively and leave the measurement of long-term impacts to university-based programs that can garner the personnel and resources to carry out such research.

B. Costs of Programs

Rough cost estimates can be derived from almost all selected programs: total expenditures can be divided by the number of clients served to yield an average annual cost per client.

1. Programs that impart knowledge or change attitudes

Most sex education courses in schools or other community agencies cost very little. The teacher is often on the faculty and the classes may occur once or twice a week and are not given every semester. A few school systems employ full time sex educators.

More innovative programs are often initiated and funded outside of the school system. Many Planned Parenthood affiliates provide all of the sexuality education in the schools at no cost to the school. The actual expenditures for Planned Parenthood are unknown but most affiliates probably include that staff time as community education. The Santa Barbara program is an example of bringing outside resources to a school system. The Girls Club, using their own funds, hires the teacher and pays for the workbooks. The estimated cost is about $40 per pupil per year. The workbook sells for $12.50 per copy, discounted in bulk.

The use of media for imparting knowledge about reproduction and responsible sexual behavior has generated high interest. The Tacoma, Washington "General High School" tape is available to other communities as are other spots and films at low cost.

2. Programs that provide access to contraception

Repeated studies of family planning clinics have shown that the cost per patient per year is under $100; serving teens is reported to be slightly more costly than serving older women. Patients pay only a fraction of the cost; the amount depends on their income, age and also on clinic policies regarding co-payment. Private physicians charge higher fees. A recent estimate of the cost of a full year of private physician family planning care is $131 to $172, including pills. Pills purchased in drug stores are priced at about $7 to $11 per cycle.

Comprehensive programs that provide family planning services in schools along with sex education, physical exams, pregnancy care and child care are much more expensive than categorical family planning programs in free standing clinics. The cost per student per year for the Lanier High School program was estimated at $320. This includes primary health care

for all high school students and daily infant care on the site, as well as transportation for the mothers and babies. The Johns Hopkins program that combines two schools and a free standing clinic costs about $200 per patient served in the clinic in the first year and about $100 per student contacted in the school. Supportive services such as personal counseling and home visiting are included. The St. Paul program is reported (by an outside source) to cost about $200 per student per year including child care (to be verified at a site visit). The same level of annual cost per patient was estimated several years ago for The Door, a multi-service free standing clinic in New York City.

3. Programs that enhance life options

Programs offered by youth-serving agencies are complex and difficult to sort out. Girls Clubs of America has excellent data on the incremental costs for special projects such as family life education and employability. But these costs do not include basic staff, facility and organizational structure. In general, for programs that deal with problems of teens, the more intensive the care, the higher the cost. The Bridge serves about 2,500 clients with a budget of $600,000, averaging $240 per client. Many volunteers work in this program and the configuration of services per client varies widely.

Alternative school programs do not generally have additional costs over and above the costs of regular secondary schooling, about $2,000-$3,000 per pupil per year. Since school systems are reimbursed by states according to average daily attendance, school systems gain by keeping enrolled children from being truant. Alternative schools use more teaching time but are usually located in smaller plants with less equipment. In New York City, because of their special status, alternative schools can accept outside funding directly without going through the Board of Education bureaucracy.

Youth employment programs outside of school systems are often quite expensive since they require equipment, special teachers and job placement expenditures. One very intensive and effective program for training and placing teenage mothers in jobs reported annual costs of about $1,200 per adolescent client (Mothers Initiative Program, New Orleans). This is probably low. A summer program of the Atlanta Girls Club had costs of about $1,000 per participant. Funding for youth employment programs (through CETA) has been terminated so that job placement costs are higher than ever.

Coalitions at the community, regional or state level may address themselves to all of the pregnancy prevention goals: imparting information, increasing contraceptive services and increasing life options as well as assisting mothers and babies. It is estimated that a state level organization with sufficient

staff for public education and advocacy might cost in the range of $100,000 to $200,000. At the local level, the costs are smaller and often donated by a local agency in the form of contributed staff supplemented with low membership fees for participating organizations. The New Orleans Coalition had available $99,000 from statewide Improved Pregnancy Outcome funds in its first year but intended to continue only with staff support from the Maternal and Child Health Division of the State Health Department.

C. Cost Per Birth Prevented

Interventions that may impact directly or indirectly on the prevention of pregnancy have a cost range from nothing to hundreds of dollars per client year of service. One way to consider alternative strategies might be to look at the comparative costs per birth prevented by different interventions. A rough figure can be derived for family planning clinics using the estimate that 110,000 teenage births were averted by the program in 1979. Total costs (expenditures) for teenage patients in the same year were $110-150 million, resulting in a cost of $1,000 to $1,363 per birth averted. But this kind of global estimate does not indicate whether more effective clinics had special service components that cost more than the average.

It is theoretically possible to develop estimates of costs per births averted for any other interventions for which both costs and rates of birth-prevention can be measured. As has been suggested, cost data are available but fertility outcomes generally are not. It may be necessary to make decisions about how to proceed with program implementation on the basis of other measures of performance. It has been shown that selected programs can achieve various short-term goals without great expenditure for either the program or the research. In any case, it is probably not feasible to try to compare the cost-effectiveness of noncomparable efforts such as a semester of sex education seminars versus a visit to a family planning clinic versus several years of individualized attention in a highly structured alternative school.

Using the classification scheme suggested, one could devise program standards or criteria that programs should meet based on the experience of what appear to be successful efforts at directly or indirectly influencing the probability of pregnancy. For example, sex education programs might be required to demonstrate an upgrading in knowledge and an understanding of decision-making skills. Family planning clinics might show a specific continuation rate among clients. Schools would demonstrate reasonable retention rates. Only a few exemplary or innovative programs would be selected as sites for conducting

the necessary long-term research needed to document changes in fertility rates.

A knowledge of the relative costs for births averted by different types of interventions would be useful to foundations so that they could invest resources in the most cost-effective approaches. This knowledge does not exist but from the discussion of costs, it should be clear that most interventions are not expensive, they do not require support to create an infrastructure, build buildings or develop technology. The children-at-risk are there and the facilities are there; the money is needed to bring the services to the children. This suggests a strategy of small grants to encourage such efforts as resource sharing, media, "consciousness-raising," outreach, program expansion and in-service training rather than the initiation of new services. Because it is difficult for funders to manage large numbers of small grants and because of the importance of putting together more comprehensive networks of services, community and state coalitions might be used as fiscal intermediaries. It would be helpful if foundations with a particular interest in the prevention of teenage pregnancy would develop more communication in order to allocate resources comprehensively, initiate research standards, avoid duplication and share the results of successful programs.

IV. STRATEGIES FOR PREVENTION

From the observations of programs, interviews, literature review and unpublished reports, it is possible to draw some preliminary conclusions for each of the three categories of the classification system about what works best and what new directions might be worth pursuing.

A. Programs That Directly Impart Knowledge or Attempt to Develop or Change Attitudes Regarding Sexual Behavior

Despite occasional conflicts at the local level, most Americans agree that children have a right to know about reproduction and a need to develop the ability to make informed decisions about their sexual lives. Parents have indicated that they want schools to take on this responsibility because they don't feel confident in their role as sex educators.

As a result, the field of sex and family life education is burgeoning, with new curricula, teacher training programs, self-administered workbooks, computer cassettes for home use, new publications and many conferences and national meetings. More and more, sex education is being presented as part of comprehensive family life education, not only to make it more palatable to the community, but because sex educators are increasingly aware of the need to help youngsters assume responsibility for making life decisions. Much of the curricula are developed and available at low cost.

Efforts are now needed in the area of implementation. According to informants, high school principals appear to be the key actors in the implementation of sex education in the nation's schools. A principal can decide whether meaningful sex education material is included in the curriculum. It has been suggested that working directly with principals is a much better strategy than confrontation with local school boards and state legislators. In Mississippi, where school funds are scarce, health educators from the State Health Department are going into schools at the invitation of principals to augment family life education. This was described as going through the "back door" in order to bring these much needed services to students. Outside groups coming into schools with teachers and teaching materials are able to offer students courses at no cost to the system and if there is "flack," the

principal can let the outside group take the "heat." A strategy to increase the availability of sex education by continuing to prod school administrators builds on the momentum created by innovative sex educators over the years.

If the goal of sex and family life education is limited to imparting knowledge, clarifying values and enhancing attitudes, then the potential for conflict is probably minimal. However, recent program developments combine sex education with the delivery of birth control services, in the school or nearby; this approach requires new strategies and additional resources (discussed below).

Sex-family life education can also be offered by youth-serving agencies outside of schools. The Girls Clubs of America has led this effort among national agencies and has documented program models involving a wide range of community resources. Almost every major youth organization is now involved in curriculum development, staff training and program implementation, including the Boy Scouts and the YMCAs, with programs for young boys. The Center for Population Options plays a key role in coordinating these groups and offering them technical assistance. Because of the vast and diverse memberships of such organizations, their potential for imparting knowledge and developing attitudes is highly significant.

It has been stated by knowledgeable sex educators that the content of most school sex education courses suffers from a middle class bias. Neither the language nor the style is conducive to engaging children from disadvantaged homes. Youth-serving organizations may be more successful than schools at reaching youngsters if they offer more imaginative, informal and entertaining approaches to the subject. Radio spots can also be used to present messages in the street idiom. Libraries can play an important role in making information available to youngsters.

B. Programs That Provide Access to Contraception

Without access to family planning clinics, it is certain that many more teenagers would be experiencing early maternity. It appears that most clinics operate with a high level of efficiency; they know how to offer quality medical services to motivated clients. These are not the easiest of times for people in the family planning field. Clinic personnel suffer from harrassment over the parental notification and consent issues generated by the Reagan Administration and must spend a great deal of time responding to federal regulations and to community relations. At the same time, they have endured repeated funding cut-backs and are struggling to find new sources of revenue. Some clinics have begun to charge teenagers

(and low-income women of all ages) for their services and it is not yet known what effect this will have on utilization.

In the course of this study, high schools in four major cities have been identified where birth control services are openly made available to students.* (Three of these schools are located in black communities.) In general, the "model" starts with highly trained nurses, social workers, counselors and/or practitioners, presenting health education classes that include birth control and conducting individual counseling sessions with students on request. Physical examinations are conducted within the school. Either referrals are made to a clinic operated within the school system or to a clinic nearby for initial prescription of methods and ongoing contraceptive care. All of these programs were initiated outside of the school system (by two university medical centers, a health center and an umbrella development organization).

The St. Paul program has already documented an effect on teenage pregnancy rates and the others have the component data sets in place with varying degrees of likelihood for carrying out the impact evaluation. Building contraceptive services into a school setting seems to have great possibilities. The students are there and the provision of birth control along with sex education and values clarification gives it a legitimacy and a reality that many other programs lack. Sex education without providing contraception does not reach passive and unmotivated teenagers while contraception without adequate sex education and counseling may lead to failure.

A most important strategy is the development of networks to insure the availability of comprehensive services and to organize advocacy. Many state and local level coalitions exist but some are more interested in amelioration (e.g., mothers and babies) than prevention. Several national organizations such as Planned Parenthood, AGI, National Family Planning & Reproductive Health Care Association and the National Organization on Adolescent Pregnancy and Parenting (NOAPP) work with state groups. These organizations should be encouraged to provide technical assistance at the local level as well as to continue advocacy, research and documentation of needs at the national level.

Coalitions at the state and local level can:

1. Develop constituencies to counteract harrassment and respond to federal regulations

2. Lobby for funds at the state and local level

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*St. Paul, Minnesota; Jackson, Mississippi; Baltimore, Maryland; and Houston, Texas.

3. Generate data on policies, needs and services

4. Bring together youth-serving agencies of all kinds so that planning, resource-sharing, referral and coordination can take place.

The collaboration of family planning programs, youth-serving organizations, social agencies and schools will be an important force in any community for maintaining current services for teenagers and innovating new ones.

C. Programs That Enhance Life Options

The availability of sex education and birth control services for motivated, literate youngsters has assisted millions of them to make informed decisions about their sexual behavior. From studies of young mothers, it is clear that many teenagers are not availing themselves of either the knowledge or the methods. These young people are becoming pregnant and carrying to term because they are alienated, ambivalent, passive and/or have no sense of the future.

Interventions that will prevent childbearing among teenagers with the characteristics of today's young mothers must give these youngsters that sense of future -- something to look forward to, to further schooling, to work, to a sense of self-worth. These interventions must take place early and they must take place where the youngsters are.

1. Schools

What role do schools have to perform in order to impact on pregnancy prevention? A major assumption of this report is that retention in school is inversely related to the teenage fertility rate. This can be tested (see research section below); it has already been demonstrated that early childbearing truncates education and more than half of female school drop-outs leave school before they become pregnant. Drop-out rates are highly associated with social and economic disadvantage. Schools have to improve their capacity to keep these youngsters engaged in school.

Drop-out rates are not widely publicized; a first order of effort is to heighten public awareness of this problem. There exists a great body of knowledge on effective schools: school principals appear to be the key to the school's attitude and behavior toward disadvantaged children. They can shape curriculum for remediation and enrichment (and, as pointed out above, for sex education), establish and implement policies on suspension and expulsion, deal with truancy problems and help shape teachers' attitudes through in-service

training. Evidence is compelling that disadvantaged children live out the prophesies of teachers who expect them to fail. These children start school with low self-esteem and the teachers often exacerbate these feelings by conveying their negative attitudes and low expectations. The parents are afraid to demand quality education for their children; they also assume that the children will fail.

One approach to keeping teenagers in school has been the development of alternative programs that offer a wider range of educational opportunities either within the school, in separate facilities or in the work place. Most of these efforts cost no more than traditional schooling but to implement them the often rigid school bureaucracy must bend to encourage innovation, flexibility and new arrangements. Teachers must be trained to work with educationally handicapped youngsters. Schools which stress individualized attention, work-study arrangements and a calm and safe atmosphere have been shown to retain potential drop-outs.

There are 2,500 alternative programs in the United States. It is important to find out whether or not these kinds of schools actually have lower fertility rates than traditional school programs. Comparisons are difficult because of the selectivity of the population that goes to alternative schools. Preliminary evidence suggests that the fertility rates are lower. If verified, the next question is: what aspect of the experience impacts on the young women's sexual behavior? Alternative schools provide many of the supports that disadvantaged children lack: role models (very important), individual counseling, consistent discipline, high expectations, enriched learning, opportunities to explore the world of work.

Many children at high risk of the kind of failure that may result in dropping out of school, in early childbearing or both, can be identified at early ages. Often they act out, looking for attention and are considered behavior problems in primary grades. Others are so passive and intimidated, teachers do not even know their names. Children who are repeatedly truant are well known to attendance officers, many of whom act as counselors and support staff for troubled families. The early warning system is in place for finding potential mothers and giving them the attention they need long before they become sexually active.

2. Employment programs

Employment is, of course, directly related to education. Unemployment rates, high for youth, higher for minority youth, even higher for minority female youth, are over 65 percent for black female drop-outs. According to studies, functional incompetence (functional illiteracy) is a major deterrent

to employment of disadvantaged youngsters. This situation is exacerbated by the critical levels of unemployment generally, leaving millions of young people with no forseeable job opportunities. Childbearing in these circumstances may be a passive response to economic deprivation.

It has been well documented that teenage childbearers account for a disproportionate share of AFDC funds but there is no proof that teenagers consciously become mothers in order to receive welfare. One recent study showed that only 17 percent of welfare mothers had intended their first pregnancies. Nevertheless, once pregnant, the obvious step is to obtain welfare and in fact, for many of these mothers, there is no other course. For many, abortion is not an acceptable alternative, and others live in states where Medicaid abortions are no longer obtainable.

A number of programs have been initiated to assist teenage mothers on welfare to move into the labor force and reduce their dependence on welfare. These programs are generally costly; they involve educational remediation, vocational training, career orientation and job placement with follow-up support. Child care is usually a component. The use of "community women" role models to act as surrogate parents to the teenage mother has also been included. As mentioned above, some of these adolescent pregnancy programs can document low repeat pregnancy rates.

No employment programs for "non-pregnant" teenagers have demonstrated impacts on pregnancy, but many include family planning information and referral in the content of workshops and seminars. The literature and experience on youth employment is vast and the subject can only be touched upon here. Schools are called upon to play important roles: preparation for work starts in school through career orientation in early grades; work-study programs are useful for job experience as well as school retention; vocational training can be a part of any school curriculum.

3. Youth-serving agencies

Youth-serving agencies through the National Collaboration for Youth, a consortium of the major social agencies, launched a major initiative on employment in 1980, funded by the Department of Labor (and cut off abruptly in 1981). A summary showed the critical features for success to be: arranging linkages between youth-serving agencies and schools, families, religious organizations, business and industry, labor unions, law enforcement agencies, colleges and universities, media and advertising; using volunteers and a community-based advisory group; arranging school credit for participation; and

using a wide range of funding sources (in addition to CETA). Barriers to success encountered during implementation of these model employment programs included: shortness of the duration of funding; internal staff problems; deterioration of the job market; insensitivity to the special needs of students; lack of reading skills; poor attendance by participants.

These are important concepts for implementing programs with limited resources. There are many arrangements that can be set up between agencies. The National Collaboration for Youth recently sponsored a conference on "Fostering a community-wide approach to youth development." A position paper articulates the problem as NCY views it: schools are failing to educate youngsters; employers are reluctant to employ youth lacking skills; parents lack the resources and know-how to help their children; and youth-serving organizations enter the scene only after the damage is done. According to NCY, the institutions (schools, courts, social and health agencies, families, etc.) affecting youth operate without coordination independent of each other; to meet this crisis, they must be brought together to share resources. In their view, the school is the most obvious setting for the focus of collaborative action.

Many kinds of collaborative arrangements are possible: agencies can bring programs directly into classrooms or bring school students to their facilities for services during school hours or after. Schools can use agency sites for regular curriculum offerings. Agencies can offer courses for which schools grant credit. By providing paid staff, volunteers, facilities and/or curriculum materials, youth-serving agencies can supplement school programs.

As we have seen, the relationship between efforts to enhance life options such as school completion and employment and efforts to prevent pregnancy is rarely made explicit. A new program initiated by the Center for Population Options is directed at specifically linking sexual decision-making and future vocational options. Entitled Life Planning Education, a curriculum is being offered to teenagers in organized discussion groups in Durham, North Carolina and Washington, D.C. (a third site will be selected shortly). The materials include a focus on the consequences of teenage pregnancy and its economic implications; definition of educational and vocational plans; exploration of sexual values; and acquisition of skills necessary to achieve goals.

D. Implications of Strategies for Prevention

• Current efforts at providing sex education and family planning services need to be maintained and expanded to give

youngsters both the ability to make informed and mature decisions about their lives and the capacity to carry out the decisions

• Such efforts are not reaching large segments of the teenage population and will not succeed unless they are included in a larger, comprehensive, all-out, life-saving effort. Interventions must take place early, before the youngsters lose whatever hope and confidence they have gained in elementary school

• Schools are the focal point for reaching youngsters early enough to make a difference. They must bear the major responsibility for assisting high-risk youngsters to overcome their social disadvantage by teaching them to read and write and to gain the societal skills necessary to complete high school, continue their education or enter the work force. Some educators know how to reach disadvantaged children and provide enrichment, support, individual attention and structure

• A wide array of youth-serving agencies, including sex education and family planning organizations stand ready to work with schools, to provide resources of all kinds including personnel, materials, facilities, and whatever else is needed to improve and enhance school systems and help children improve their life chances

• While funds are always necessary to implement programs in school and outside, much can be accomplished even with limited resources if the spirit of collaboration can be initiated. Formal coalitions at the local, state and national levels can insure referral networks, advocacy and the sharing of resources

• People in categorical programs may suffer from tunnel vision, seeing only the part of the problem they are treating. Thus, school personnel are not aware of their role in pregnancy prevention while family planning personnel do not view pregnancy as a symptom of deprived social conditions

• Awareness is growing among youth-serving personnel that early childbearing cannot be prevented unless poor and minority children perceive that there are broader opportunities to which they will have access in the future

• Poor and minority parents want their children to succeed but they lack the social skills and the organizational contexts needed to articulate their demands

• Coordinated services (medical, welfare, education, employment, counseling, child care) for pregnant teenagers and teen mothers are becoming available in many communities. If the same range of services would have been made available to these youngsters before they became pregnant, it is possible that much of the childbearing could have been prevented.

V. INTERVENTIONS SUGGESTED BY THESE FINDINGS (Preliminary)

A. School Involvement

Much has been stated about the necessity for working in the schools and with the schools, using successful programs as models. Every indicator has pointed to the key role of junior and senior high school principals in determining the quality of education offered to disadvantaged children.

1. School principals must be better informed about the potentiality of school retention and enrichment for prevention of early childbearing. Principals can be reached through their state and national professional organizations (National Association of Secondary School Principals) and through their professional journals. At the local level, they can be approached by outside agencies with offers of services.

2. Teachers can be reached through their professional organizations, unions and PTAs. Many teachers in inner city schools feel threatened and unappreciated. Offers of assistance from community groups might encourage them to be more supportive of high-risk students.

3. Other school personnel have extensive contact with high-risk children. Attendance officers are in daily contact with truants. Guidance counselors are supposed to assist students to deal with school-related problems but most of their efforts are directed toward college placement. Some systems employ social workers, psychologists or home visitors. All of these groups need to be reached in order to raise consciousness about their potential role in pregnancy prevention.

4. Curricula, materials, staff, volunteers, facilities and other resources need to be offered to school systems by local organizations to help them with school enrichment, alternative classes, sex and family life education, on-site or nearby medical care and other programs such as the ones described in this report.

B. Coalitions

No one organization or agency can serve all the complex needs of today's youth. Coalitions and networks can enhance resource sharing and take the responsibility for developing comprehensive services. Needs assessments should be broadened to encompass the total life of the child and not be limited by categorical requirements.

Existing coalitions need to expand in two directions: those that include only agencies that are concerned about teenage pregnancy need to involve other groups such as schools and youth-serving organizations; those that include only agencies concerned with broader youth issues (such as community youth councils) need to involve pregnancy prevention agencies.

It is particularly important to involve leaders of organizations that represent minority groups in pregnancy prevention efforts. Conferences, workshops and small group discussions can enhance the exchange of experience, information and strategies.

C. Media

Few people are aware of the school drop-out problem and while unemployment figures are more visible, little connection has been made between these two symptoms and out-of-wedlock birth rates. Yet the suggestion that school drop-out may be leading to childbearing has been met almost universally with a sense of recognition . . . "I never thought of that but it sounds logical."

A publication documenting the plight of America's disadvantaged youth would be useful for broadening understanding of the true dimensions of the problem.

D. Family Involvement

As has been pointed out, parents want to be involved but they lack the skills, knowledge and awareness of local resources. Indigenous community groups should be encouraged to become involved in the issue of teenage pregnancy. Discussions and workshops can be organized within church groups, sororities, fraternities, clubs, unions, PTAs and other places where mothers and fathers congregate. Studies have shown that even among parents who do communicate with their children, the content is often incorrect (the time of ovulation, side effects of pills, risk of death from abortion) or the acceptance of pregnancy is misinterpreted by the child as approval.

VI. RESEARCH SUGGESTED BY THESE FINDINGS

The consequences of early childbearing, particularly for poor and minority families, have been well documented. Many possible interventions have been proposed here and in other studies that can assist these families to improve their circumstances. If resources are limited, it may be that action can proceed without a great amount of further research. This is a difficult admission for a researcher, but certain directions emerge from this overview that have high intuitive validity, for example, in regard to interventions, the need for the involvement of schools at many levels and the bringing of outside resources into the schools to accomplish these goals. The advantages of building coalitions and sharing resources does not require further proof.

This overview suggests that action is the critical need and that research should be directed toward enhancing action. It would still be useful to be able to document the impact of selected programs on the prevention of pregnancy. It would also further the life-options hypothesis to elucidate the relationship between school retention and early maternity. This would give further evidence to the relationship between motivation to prevent pregnancy and having a sense of future.

A. Program Evaluation

As stated previously, efforts to identify programs that could document an effect on pregnancy rates met with little success. Only those programs with major institutional and foundation backing for research had that capacity. In order to conduct the research required to prove that programs have such an effect, outside support and technical assistance is required.

Because of the high cost of long-term evaluation research, it is proposed that only those types of programs with the highest potential for broadening our knowledge base be considered. High priority might be given to school-based programs that are either directly aimed at pregnancy prevention (school-clinic combinations) or may have the potential for indirectly impacting on pregnancy rates (alternative schools). This does not mean that other types of interventions (sex education, family planning services) should have low priority for funding,

but it implies that long-term evaluation is infeasible because of the cost and complexity.

All programs should, of course, be required to maintain client records and produce short-term measures of achievement of stated goals. It is essential for the continuation of the family planning program that monitoring of access be given high priority. There is no other way to maintain the visibility of the program.

Once a model has been documented to have an impact, it should not be necessary to continually replicate the research. Four different school-clinic combinations have been described above; if each can show effects, then it would seem that other school-clinic programs could be supported without a long-term research component.

The evaluation of the impact of "future options" interventions on the prevention of early childbearing is an entirely new undertaking. If the hypothesis is valid that school retention acts as an indirect pregnancy-prevention intervention, then it should follow that alternative schools will have low fertility rates. Because of the problem of selectivity of students, it would be necessary to compare fertility rates in these schools with rates for similar students who dropped out of school and similar students who remained in their regular classrooms. Some of these variables can be extracted from national sample surveys (see below). It would also be useful to go directly to alternative schools and find out whether or not their students experience many births. Although these schools collect and produce outcome measures such as attendance and completion rates, fertility is not currently one of the variables. However, data on births could be extracted relatively easily from student records.

The Project on Alternatives in Education at Hofstra University is a clearinghouse for information; the staff recently completed a mail survey of 1200 alternative public secondary schools and they intend to conduct a more detailed survey of 100 programs and make 30 site visits in the near future. This group has indicated an interest in collaborative research. The Public Education Association has recently studied in depth eight alternative programs in New York City and staff members are also interested in collaborative research.

If alternative schools are shown to have lower fertility rates, the next question would be: what happens in these schools that assists youngsters to control their fertility? Is it the individual attention, the structured environment, the enriched curriculum or the work/study approach? Or is it the repetition of the message that early childbearing limits opportunity backed up with day-to-day support for prevention?

Are these students more highly motivated than those who drop out? The school experience for disadvantaged children is a compelling area of research about pregnancy prevention.

B. Documentation of the Relationship Between School Retention and Early Maternity

Several large data sets exist from which the school experience can be tracked along with pregnancy histories, controlling for many other variables. A number of researchers have expressed an interest in conducting special tabulations and analyses of these surveys.

1. U.S. Census of 1980 and current population surveys

Using Census data, it is possible to compare teenage mothers and non-mothers by school attendance and achievement levels (drop-out versus continuation), controlling for race, Hispanic status, poverty level, employment and region. From the 1980 Census, detailed tabulations can be produced for single years of age or for specific geographic areas. With the latter, it might be possible to determine the impact of state-wide school policies on educational retention.

2. National Longitudinal Surveys of Labor Force Behavior (NLS) (Departments of Labor and Defense, grant to Center for Human Resource Research, The Ohio State University)

This is a national sample survey of about 12,000 youth who were 14 to 21 years old in 1979 and are being interviewed through 1984. This study is very large, contemporary, longitudinal, includes males and females and is rich in detail, including many aspects of marriage and childbearing, educational experiences and attitudes, labor market experiences, future orientation, household chores and care of children. This NLS survey panel extends from 1979 to 1984; previous panels covered the period from 1968 to 1980. Analysis of NLS data on the consequences of teenage pregnancy conducted to date have been based on the earlier panels. Using the current panel, it would be possible to examine whether a reduced level of school drop-out might reduce teenage pregnancy.

3. High School and Beyond (HS & B) (National Center for Educational Statistics)

This is a longitudinal survey of 58,000 high school sophomores and seniors, beginning in 1980 and continuing biennially through 1984. Sophomore students from 1980 who had dropped out by 1982 (14 percent of the sample) were tracked, followed-up and tested. Follow-up surveys for 1982 include

questions about births; age of children can be calculated for the drop-outs and seniors but not for the in-school sophomores (two years later).

The sample includes students from regular, alternative, Catholic and "elite" schools. Content for students includes high school experiences with test scores, outside activities, values and attitudes and future plans. A school questionnaire covers programs, practices and policies.

The 1982 data collection has been processed and a public use file should be available shortly. The 1980-1984 HS & B, like the NLS, builds on a previous survey, the HS & B of 1972. Therefore, trend data are available on many variables.

4. National Survey of Family Growth (NSFG)

The 1982 survey (unlike the 1973 and 1976 NSFGs) includes a sample of all women aged 15 to 44 with about 1900 respondents aged 19 or less. Sex education, sexual activity, birth outcomes and intentions, contraception and use of services are covered along with many descriptive variables including year and date of school completion. A public use tape will be available in about a year.

The 1982 NSFG picks up the series of studies of teenagers conducted by Johns Hopkins University (Kantner and Zelnik) in 1971, 1976 and 1979. Many of the questions have been replicated. The school completion question gives this survey the capacity to track the timing of pregnancies in relationship to school enrollment.

These sources of data (Census, NLS, HS & B, NSFG), properly mined, could clarify the relationship between school retention and childbearing along with analysis of a large number of interesting and important variables. Most of these studies include work histories, and several have details on use of government sponsored educational, employment and medical programs. For the purposes of exploring the school drop-out question, several of the sources can be tapped without delay (Census, NLS, HS & B) and at a low cost.

In addition to these large scale national sample surveys, other research has been conducted using local area samples that may yield important findings in regard to the relationship of educational experiences to early maternity. Some have selected samples such as Hispanics, welfare clients, mothers under age 16, and other specific groups. It would be useful to compile findings relevant to this topic.

APPENDIX

CHART 1. TYPOLOGY OF INTERVENTIONS THAT MAY PREVENT TEEN PREGNANCY

Goal: Programs that directly impart knowledge or attempt to develop or change attitudes re sexual behavior

Setting	Client/Target	Intervention	Personnel	Example
School	Elementary student	Family life education "birds,bees"	Teacher Guidance counselor	Flint, Mic
	Junior high student	Family life and sex ed Personal guidance	Gym teacher School nurse Sex educator	Falls Church
	High school student	Sex ed incl birth control Personal guidance Values clarification Responsible decision-making	Health educators from outside	St. Paul
	Parent	Family life ed Techniques for communication Mother/daughter workshops	Teacher PTA leaders	
University	Teacher Administrator	Curriculum development Teaching techniques Adolescent development Health education	Trainer Sex educator Faculty	Santa Cruz
Church	Child and parent	Moral education, values Abstention	Clergy Teacher	Mormons
	Child	Family life education	Teacher	Unitarians
	Parent	Family life education Techniques of communication	Teacher	
Community groups	Community	Family life education Communication - Theater groups	Group workers	Metrc Hosp
	Child - Club members Scouts	Family life education Counselling	Group leader	Girls Clubs
	Professionals	Community-wide meetings "What can be done..." Coordination, networking	Staff of coor. agencies such as United Way	
State	Reps. of public / private agencies	State-wide meetings, coalitions Documentation of needs	Staff	NY State

CHART 1. Page 2

Goal: Programs that directly impart knowledge or attempt to develop or change attitudes re sexual behavior.

Setting	Client/Target	Intervention	Personnel	Example
Specialized social agency	Teenagers Parents Professionals	Information Counselling Therapy Teaching materials, techniques	Social worker Psychologist Psychiatrist	
Media	Everyone	TV programs with sexual content Porno literature Pop music	Networks Publishers Music industry	Center Pop Opt.
	Teenagers	TV programs that instruct Sex ed publications Newspaper columns, advice	Networks Sex educators Writer	CPO Sol Gordo Ann Lander
	Parents, community leaders	TV programs that encourage communication	Communications people	Ann Solem
Home	Teenagers Children	Counselling Role models Instruction about sex behavior Provision of publications Support	Parents	
Hospital Outreach	Teenagers	Counselling Education Recruitment	Community health advocates	Columbia Sch. Pub. Health
Library	Teenagers Children Parents	Discussion groups Reading materials Films	Librarian	Philadelphia

CHART 1. Page 3

Goal: Programs that provide access to contraception

Setting	Client/Target	Intervention	Personnel	Example
Family planning clinics (may be in health dept., hosp., PP, etc)	Females	Counselling re sexuality Orientation re contraceptive methods and reproduction Examination and prescription Follow-up and outreach	Clinic staff	
	Teenagers	Rap sessions Peer counselling Parental involvement	Specially trained staff, peers	Metro Wash PP
	Males	Counselling with partners Condom distribution	Male counsellors	Atlanta PP
	Parents	Counselling re teen sexuality Consent if required	Clinic staff	Phila.
Private physicians offices (in conjunction with area clinic program)	Teenagers	Prescription of contraceptives Pregnancy testing and counselling Abortion	Physician Nurse	
	Parents	Counselling re teen sexuality	Physician	
Abortion clinics	Teenagers	Pregnancy testing and counselling Abortion Provision of contraception or referral	Clinic staff	
Other health agencies	Community	Provision of contraception or referral to specialized agency for family planning Pregnancy testing, counselling, abortion	Clinic staff	
Hospital ob/gyn progs and free-standing comprehensive clinics for pregnat teens	Pregnant teens	Maternity care, incl post-partum Family planning Counselling to avoid repeat pregnancy	Special clinic staff	Johns Hopkins

CHART 1. Page 4

Goal: Programs that provide access to contraception

Setting	Client/Target	Intervention	Personnel	Example
Schools	Teenagers	Counselling about methods Examination and prescription Follow-up	Health educator Nurse practitioner	St Paul Baltimore
Street- Pool hall	Males	Condom distribution	Youth workers	
Stores (some are specialized 'sex')	Community	Condom and foam sales	Salesman	No. Carolina
Pharmacy	Community	Condom and foam sales Pill prescriptions Counselling and referral	Pharmacist	

CHART 1. Page 5

Goal: Programs that enhance life options

Setting	Client/Target	Intervention	Personnel	Example
School	Teenagers with low motivation to stay in school	Preventing dropout Skills development, literacy Counselling and support	Teachers - role models Special counselors	Middle College High Sch,
	Teenagers	Vocational counselling, guidance Career training Specialized courses	Guidance counselors Special teachers	
	Teenagers with lack of languageskill	Courses designed for English as a Second Language (or in other languages)	Special teachers	
	Teenagers who want to work	Job placement for part time work	Job counselors	
Employment programs	Teenagers who want to work	Skills development Career counselling Job placement Follow up and support	Job developer Specialized teachers Counselors	
Comprehensive Youth Serv.; Settlement House, etc.	Youth: some with specific targets such as pregnant teens, high-risk, dropouts, etc.	Health sevices, tutoring, employment counselling and referral, vocational training, counselling for problems, child care, recreation and cultural activities Crisis intervention Outreach and follow-up	Roster of specially trained staff	The Door Horizon
Welfare department	AFDC families	Counselling and referral Work Incentive program ?	Case worker	
Youth Serving Agencies (Center for Pop. Options)	Potential members: Scouts, 4H, YWCA, etc Parents	Recreation and cultural events Socialization, values building Skills development, vocational outlook Inspiration Communication with teens	Group leaders Group workers	Salvation Army

CHART 1. Page 6

Goal: Programs that enhance life options

Setting	Client/Target	Intervention	Personnel	Example
Church	Members	Uplife, inspiration, hope	Clergy	
	Youth	Recreation Socialization Intellectual stimulation	Youth workers	
Police Agency	Youth	Protection Recreation Role models	Policeman Youth worker	
Youth Authority (Prison) Courts	Youthful offenders	Skills development Education Counelling and support Follow up	Prison staff Parole officers Probation officers	
Drug Abuse and Alchohol, Mental Health Programs	Problem Youth	Treatment Counselling Referral	Special counselors	
Women's Groups	Women	Sharing experience Support Improving status of women	Group members	Sisterhood of Black Mothers
Group homes	Multi-problem teens also developmentally disabled	Custodial care Psychological support Family life education	Case workers	
Community	Teens	One-to-one support	Volunteer surrogate parents	Big Brothers
Medi a	Community	Role models Inspiration	Networks Publications "Celebrities"	